

CLAIMS

What is claimed is:

1. A method for analyzing a nucleic acid sample comprising:

 Selecting a first and second sets of nucleic acids from the nucleic acid sample with a first and second nucleic acid affinity matrices, wherein the first and second nucleic acid affinity matrices hybridizes with two different set of nucleic acids;

 Labeling the first and second sets of nucleic acids with different labels; and

 Detecting the first and second sets of nucleic acids based upon the different labels.

2. The method of Claim 1 wherein the first affinity matrix comprise oligonucleotide probes that hybridize with the first set of nucleic acids and the second affinity matrix comprise oligonucleotide probes that hybridize with the second set of nucleic acids.
3. The method of Claim 2 wherein the affinity matrices are collections of beads.
4. The method of Claim 3 wherein the different labels have different colors.
5. The method of Claim 4 wherein the different labels are fluorescent labels.
6. The method of Claim 5 wherein the different labels are fluorescent labels with different emission colors.

7. The method of Claim 6 wherein the detection comprising hybridizing the labeled first and second sets of nucleic acids with an oligonucleotide microarray.

8. The method of Claim 7 wherein the hybridizing is sequential.

9. The method of Claim 7 wherein the hybridizing is simultaneous.

10. The method of Claim 9 wherein the first and second sets are mixed before hybridization.

11. The method of Claim 7 wherein the detection comprising hybridizing the labeled first and second sets of nucleic acids with a collection of bead array.

12. A method for analyzing alternative splicing comprising:

Selecting a first and second sets of nucleic acids from a transcript sample with a first and second nucleic acid affinity matrices, wherein the first and second nucleic acid affinity matrices hybridizes with two different set of nucleic acids representing two sets of splice junctions;

Labeling the first and second sets of nucleic acids with different labels; and

Detecting the first and second sets of nucleic acids based upon the different labels.

13. The method of Claim 12 wherein the first affinity matrix comprise
oligonucleotide probes that hybridize with the first set of nucleic acids and the
second affinity matrix comprise oligonucleotide probes that hybridize with the
second set of nucleic acids.
14. The method of Claim 13 wherein the affinity matrices are collections of beads.
15. The method of Claim 14 wherein the different labels have different colors.
16. The method of Claim 16 wherein the different labels are fluorescent labels.
17. The method of Claim 16 wherein the different labels are fluorescent labels with
different emission colors.
18. The method of Claim 17 wherein the detection comprising hybridizing the labeled
first and second sets of nucleic acids with an oligonucleotide microarray.
19. The method of Claim 18 wherein the hybridizing is sequential.
20. The method of Claim 18 wherein the hybridizing is simultaneous.
21. The method of Claim 20 wherein the first and second sets are mixed before
hybridization.

22. The method of Claim 18 wherein the detection comprising hybridizing the labeled first and second sets of nucleic acids with a collection of bead array.